

THE WEATHER OF THE MONTH.

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PRESSURE.

The distribution of mean atmospheric pressure for October, 1907, over the United States and Canada, is graphically shown on Chart VI, and the average values and departures from the normal are shown for each station in Tables I and V.

During October, 1907, the increase in mean pressure over that for September in all the central districts of the United States and Canada was decidedly above the average, ranging from +.10 to +.15 inch, whereas the normal increase is less than .05 inch, except over the upper Missouri Valley and the districts west of the Rocky Mountains where the October pressure averages from .05 to .10 inch above that for September. Over the extreme eastern portion of the Maritime Provinces of Canada, the immediate coast of central and northern California, and the northern portions of Alberta and Saskatchewan the pressure for October, 1907, was slightly less than that for the preceding month.

The average pressure for the month exceeded the normal from .05 to slightly more than .10 inch, over all districts from the Rocky Mountains eastward to the Lake region and the south Atlantic coast. Over New England and the Canadian Maritime Provinces it was slightly below normal, and a similar condition prevailed over California, Oregon, southern Washington, and western Nevada.

The mean pressure for the month was highest, 30.15 or above, over the Ohio Valley and Tennessee, decreasing to 29.95 over the eastern and northern portions of Canada, and to 29.90 over the lower Colorado Valley.

The winds along the Atlantic coast and over the southern Appalachian region during October are normally from the northeast, over the west Gulf, central valleys and lower Lake region from the south, over the upper Missouri Valley from the northwest, while west of the Rocky Mountains they are generally from some westerly point.

During the current month, under the influence of the high pressure in the Ohio Valley, westerly and northerly winds prevailed over the lower Lakes, New England, and nearly the entire Atlantic and Gulf coast districts. Over the central valleys the usual southerly winds prevailed, while west of the Rockies southerly and westerly winds predominated.

Over the Lake region, New England, and the immediate Atlantic coast, storm activity was slightly above the normal, as shown by the increased wind movement, but over nearly all other portions of the United States there was an apparent decrease, the average velocity of the wind movement showing a decrease of from 10 to 30 per cent from the normal.

TEMPERATURE.

The increased pressure over the Ohio Valley and surrounding districts, the general absence of clouds to interfere with radiation at night, and the prevalence of northerly and westerly winds brought much cool, frosty weather to nearly all districts east of the Mississippi River. Over the lower Lakes, New England, and the Middle Atlantic States, the monthly mean temperature was about 4° below the average. In portions of the above districts, especially the lower Lake region, the temperature has averaged below the normal continuously for the seven months, April to October, inclusive.

From the Rocky Mountains westward to the Pacific the reverse of these conditions prevailed. Warm southerly winds penetrated far to the north over the Rocky Mountain and Plateau districts, and at points in the northern portions of those districts it was one of the warmest Octobers in their meteorological history, and marked the breaking up of the period of deficient temperature that had prevailed over those districts since the end of March.

Temperature extremes were generally within the usual October limits. Maximum temperatures from 90° to 96° were recorded in central Texas, and from 90° to slightly more than 100° in the central valleys of California and over southwestern Arizona. Over northern New England maximum temperatures did not go above 70°.

Freezing temperatures penetrated into the northern portion of the cotton region States and occurred generally at exposed points in the mountain and Plateau districts. Over the lower elevations of California, the western portions of Oregon and Washington, and in the Snake River Valley of Idaho, the minimum temperatures were well above the freezing point and no damaging frosts occurred.

PRECIPITATION.

The distribution of precipitation during October, 1907, is graphically shown on Chart IV by appropriate shading or by figures representing the actual amount of fall.

During October the precipitation is usually heaviest along the south Atlantic and north Pacific coasts, where the amount of fall ranges from about 6 inches on the North Carolina coast to slightly more than 10 inches on the coast of Florida, and from about 3 inches on the northern California coast to more than 8 inches on the northern coast of Washington. During October, 1907, the precipitation was markedly deficient over the above-mentioned districts, and the area of heaviest precipitation covered portions of southern and western Texas and central Arizona, where normally the rainfall is less than in any other portion of the United States.

Precipitation was above the normal over the higher elevations of New England, in New York, the lower Lake region, portions of the Ohio Valley, and generally over the entire southern half of the United States from the Mississippi River west to the Pacific Ocean.

Over portions of southern and western Texas the monthly precipitation ranged from 6 to 10 inches, and over central Arizona from 4 to 8 inches, amounts far in excess of the usual fall for those regions.

Precipitation was unusually light over the South Atlantic and east Gulf States and the Florida Peninsula, where the total fall was generally less than 30 per cent of the normal, and in portions of North Carolina and South Carolina, it was less than 10 per cent of the normal.

Precipitation was deficient over the entire northern half of the country from the upper Lakes westward to the Pacific coast; the deficiency over western Oregon and the Puget Sound and coast districts of Washington ranging from 2 to more than 4 inches.

Rain occurred at unusually frequent intervals over Texas, New Mexico, and Arizona, and over California after the 20th, and the streams of those districts, especially in Arizona, were maintained at unusually high stages for the season.

Over the east Gulf and South Atlantic States showers were of infrequent occurrence, with practically no precipitation over large sections of those States from the 10th to 26th.

Heavy rains occurred over the greater part of the Middle Atlantic States and New England from the 27th to 29th.

Over the northern districts from the Lake region to the Pacific the precipitation occurred as light local showers.

SNOWFALL.

There was a rather marked absence of snowfall over the northern Rocky Mountain districts, but depths of several inches were recorded over the high elevations of Colorado and northern Arizona. Considerable snow fell over the interior of New England and in the Appalachian Mountain districts from New York to Virginia.

HUMIDITY AND SUNSHINE.

Relative humidity averaged from 5 to 10 per cent below the normal over the entire Atlantic coast and east Gulf districts, and from the upper Lakes westward to the Rocky Mountains. Over the remaining districts the relative humidity was above the normal, being especially high over Texas and the greater part of the Rocky Mountain and Plateau districts, where the averages ranged from 10 to 30 per cent above the normal, making the tenth consecutive month during which the relative humidity has persistently remained above the normal over the greater part of the districts last mentioned.

There was a general excess of sunshine over all northern and eastern portions of the United States, especially along the Atlantic coast and over the northern Rocky Mountain and Plateau districts, where the amount of sunshine ranged from 70 to 80 per cent of the possible.

Over the districts from the lower Mississippi Valley westward to the Pacific much cloudy weather prevailed, the amounts of sunshine being generally less than 50 per cent of the possible.

WEATHER IN ALASKA.

Reports from the southern coast stations show the usual heavy October rainfall, varying from about 10 inches in the Sitka district to nearly 30 inches in the vicinity of Cook Inlet and at the mouth of the Copper River.

Meager reports from the interior districts indicate that considerable snow occurred, and the covering on the ground at the end of the month ranged from a few inches to more than a foot in depth.

A severe cold wave overspread the upper Yukon and Copper River districts from the 15th to 20th, with minimum temperatures from 10° to 24° below zero.

Brilliant auroras were noted in the upper Yukon on the 1st and 15th.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
New England.....	12	47.1	- 3.6	-23.6	- 2.4
Middle Atlantic.....	16	52.4	- 3.7	-15.6	- 1.6
South Atlantic.....	10	61.5	- 2.2	+ 5.4	+ 0.5
Florida Peninsula*.....	8	73.0	- 0.9	+11.5	+ 1.2
East Gulf.....	11	65.6	+ 0.1	+16.1	+ 1.6
West Gulf.....	10	67.5	+ 1.2	+20.4	+ 2.0
Ohio Valley and Tennessee.....	13	54.5	- 2.5	- 5.3	- 0.5
Lower Lake.....	10	47.3	- 4.2	-22.1	- 2.2
Upper Lake.....	12	45.2	- 2.4	-15.6	- 1.6
North Dakota*.....	9	44.5	+ 1.6	-25.8	- 2.6
Upper Mississippi Valley.....	15	51.5	- 1.3	-10.2	- 1.0
Missouri Valley.....	12	53.6	+ 0.9	- 2.4	- 0.2
Northern Slope.....	9	49.2	+ 4.8	- 7.5	- 0.8
Middle Slope.....	6	56.8	+ 1.2	+11.5	+ 1.2
Southern Slope*.....	7	62.4	0.0	+19.2	+ 1.9
Southern Plateau*.....	12	58.0	+ 0.8	+ 0.9	+ 0.1
Middle Plateau*.....	10	53.7	+ 5.1	+10.1	+ 1.0
Northern Plateau*.....	12	53.4	+ 5.3	- 3.0	- 0.3
North Pacific.....	7	53.6	+ 2.5	- 1.7	- 0.2
Middle Pacific.....	8	61.5	+ 1.9	- 2.0	- 0.2
South Pacific.....	4	64.2	+ 1.9	+ 4.6	+ 0.5

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director R. F. Stupart says:

The temperature was supernormal from eastern Saskatchewan to the coast of British Columbia, and normal in southern Manitoba, and very locally along the Gulf of St. Lawrence; elsewhere in Canada it was subnormal. Positive departures from the average were pronounced in Alberta, varying between 5° and 9°, while negative differences of from 2° to 5° were recorded in Ontario and the greater portion of Quebec.

The precipitation of the month differed materially over the various portions of the Dominion, in fact more so than usually occurs. From Manitoba to the Pacific coast it was deficient to the extent of from 66 to 100 per cent, whereas from eastern Ontario to the Gulf of St. Lawrence there was a marked excess over the average, the equivalent being 16 per cent in the Ottawa Valley, increasing to the large amount of 102 per cent

in the Gaspé Peninsula. In Ontario, over the greater portion of the Province, the precipitation varied considerably with the district, some localities recording a positive departure and others a negative. In the Maritime Provinces the departures from the average were unimportant, except in Cape Breton where a considerable excess was experienced.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		Inches.	Inches.
New England.....	12	3.57	100	0.0	- 3.1
Middle Atlantic.....	16	2.30	70	-1.0	- 3.3
South Atlantic.....	10	0.65	18	-3.0	-11.4
Florida Peninsula*.....	8	2.47	49	-2.6	- 8.8
East Gulf.....	11	1.11	40	-1.7	- 3.7
West Gulf.....	10	3.52	125	+0.7	- 8.0
Ohio Valley and Tennessee.....	13	2.38	92	-0.2	- 2.0
Lower Lake.....	10	3.66	124	+0.7	- 0.8
Upper Lake.....	12	1.44	51	-1.4	- 1.9
North Dakota*.....	9	0.77	66	-0.4	- 1.2
Upper Mississippi Valley.....	15	1.31	54	-1.1	+ 2.0
Missouri Valley.....	12	1.68	89	-0.2	- 2.4
Northern Slope.....	9	0.25	38	-0.4	+ 0.9
Middle Slope.....	6	2.46	158	+0.9	- 1.2
Southern Slope*.....	7	3.80	173	+1.6	- 0.4
Southern Plateau*.....	12	2.70	300	+1.8	+ 3.8
Middle Plateau*.....	10	1.16	100	0.0	+ 2.2
Northern Plateau*.....	12	0.74	65	-0.4	+ 1.6
North Pacific.....	7	1.26	32	-2.7	- 9.9
Middle Pacific.....	8	1.33	93	-0.1	+ 2.8
South Pacific.....	4	1.80	225	+1.0	+ 2.5

* Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	73	- 6	Missouri Valley.....	62	- 9
Middle Atlantic.....	74	- 12	Northern Slope.....	67	+ 7
South Atlantic.....	74	- 4	Middle Slope.....	68	+ 9
Florida Peninsula.....	75	- 5	Southern Slope.....	76	+13
East Gulf.....	73	0	Southern Plateau.....	64	+18
West Gulf.....	77	+ 5	Middle Plateau.....	61	+12
Ohio Valley and Tennessee.....	74	+ 3	Northern Plateau.....	60	- 3
Lower Lake.....	73	- 1	North Pacific.....	86	+ 4
Upper Lake.....	77	- 1	Middle Pacific.....	72	+ 2
North Dakota.....	70	- 12	South Pacific.....	74	+ 4
Upper Mississippi Valley.....	73	- 1			

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	4.8	- 0.7	Missouri Valley.....	3.4	- 0.5
Middle Atlantic.....	3.6	- 1.2	Northern Slope.....	2.8	- 1.4
South Atlantic.....	3.3	- 0.7	Middle Slope.....	4.2	+ 1.1
Florida Peninsula.....	3.2	- 1.5	Southern Slope.....	6.1	+ 3.3
East Gulf.....	4.4	+ 0.4	Southern Plateau.....	4.4	+ 2.4
West Gulf.....	5.1	+ 1.5	Middle Plateau.....	4.6	+ 1.4
Ohio Valley and Tennessee.....	4.6	+ 0.1	Northern Plateau.....	3.1	- 2.0
Lower Lake.....	5.6	- 0.2	North Pacific.....	6.9	+ 1.0
Upper Lake.....	5.8	- 0.3	Middle Pacific.....	5.1	+ 1.9
North Dakota.....	3.6	- 1.5	South Pacific.....	4.4	+ 1.4
Upper Mississippi Valley.....	4.2	- 0.2			

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Block Island, R. I.....	8	54	nw.	New York, N. Y.....	29	50	nw.
Do.....	29	51	nw.	North Head, Wash.....	28	52	se.
Buffalo, N. Y.....	11	50	sw.	Do.....	30	60	se.
Eastport, Me.....	8	53	s.	Point Reyes Light, Cal.....	1	78	nw.
Galveston, Tex.....	30	62	nw.	Do.....	2	52	n.
Mount Tamalpais, Cal.....	1	62	nw.	Portland, Me.....	8	52	s.
Do.....	2	54	n.	Tatoosh Island, Wash.....	10	50	ne.
Do.....	3	50	n.	Williston, N. Dak.....	8	55	nw.
Nantucket, Mass.....	8	60	sw.				